



(19) Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) EP 1 403 633 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
07.04.2004 Bulletin 2004/15

(51) Int Cl. 7: G01N 15/14

(43) Date of publication A2:
31.03.2004 Bulletin 2004/14

(21) Application number: 03020445.7

(22) Date of filing: 12.09.2003

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: 27.09.2002 US 259332

(71) Applicant: Becton Dickinson and Company
Franklin Lakes, New Jersey 07417-1880 (US)

(72) Inventors:
• Norton, Pierce
Morgan Hill California 95037 (US)

• Javadi, Shervin
San Jose California 95134 (US)
• Vrane, David R.
San Jose, California 95112 (US)

(74) Representative:
Weber, Thomas, Dr.Dipl.-Chem. et al
Patentanwälte
von Kreisler-Selting-Werner,
Postfach 10 22 41
50462 Köln (DE)

(54) Fixed mounted sorting cuvette with user replaceable nozzle

(57) A flow cell and flow cytometer in which a nozzle at the end of a flow channel is disposed on a removable substrate held at a registered location on a flow cell. Other elements including illumination optics, light collection optics, and the flow cell may then be positioned at fixed locations and would not require subsequent periodic adjustment. The registered location for positioning the nozzle allows removal and replacement of the nozzle key with the nozzle subsequently positioned in the identical location.

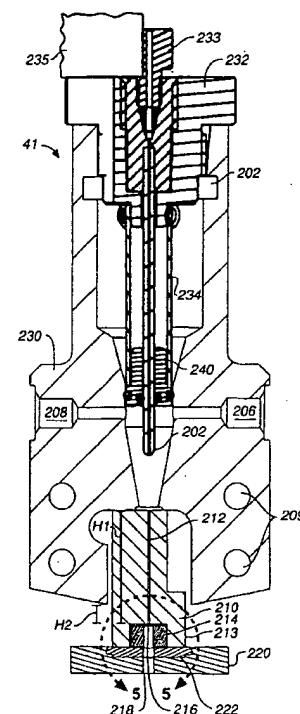


FIG.-3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 03 02 0445

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)						
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim							
X,D	US 4 660 971 A (SAGE ET AL) 28 April 1987 (1987-04-28) * the whole document *	1-3,5,6, 10-19, 23-44, 55-69	G01N15/14						
Y	---	4,7-9, 20-22, 45-54							
Y,D	US 6 133 044 A (VAN DEN ENGH GER) 17 October 2000 (2000-10-17) * abstract * * column 9, line 28 - column 10, line 4 * * figure 1 * * figure 4 * ---	7-9, 20-22, 45-54							
Y,D	US 5 700 692 A (SWEET RICHARD G) 23 December 1997 (1997-12-23) * abstract * * column 4, line 27 - line 38 * * figure 1 * ---	4							
Y	US 5 517 870 A (KURIMURA MASAAKI ET AL) 21 May 1996 (1996-05-21) * abstract * * column 8, line 9 - line 37 * * figure 3 * -----	7-9, 20-22							
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)						
			G01N						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>MUNICH</td> <td>12 February 2004</td> <td>Bravin, M</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	MUNICH	12 February 2004	Bravin, M
Place of search	Date of completion of the search	Examiner							
MUNICH	12 February 2004	Bravin, M							
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>									

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 03 02 0445

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-02-2004

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4660971	A	28-04-1987	AU	573144 B2	26-05-1988
			AU	4098985 A	07-11-1985
			CA	1242593 A1	04-10-1988
			DE	3577747 D1	21-06-1990
			DK	187985 A ,B,	04-11-1985
			EP	0160201 A2	06-11-1985
			FI	851323 A ,B,	04-11-1985
			JP	1928836 C	12-05-1995
			JP	4031353 B	26-05-1992
			JP	60238762 A	27-11-1985
<hr/>					
US 6133044	A	17-10-2000	AU	698929 B2	12-11-1998
			AU	3958295 A	06-05-1996
			CA	2201324 A1	25-04-1996
			DE	69532416 D1	12-02-2004
			EP	0786078 A2	30-07-1997
			JP	10507524 T	21-07-1998
			WO	9612171 A2	25-04-1996
<hr/>					
US 5700692	A	23-12-1997	NONE		
<hr/>					
US 5517870	A	21-05-1996	JP	2763468 B2	11-06-1998
			JP	6194300 A	15-07-1994
<hr/>					